a paper on *Gladiolus Segetum* (Ber. Berl. Acad. May 22, 1856), in which he takes up our view entirely, from independent observation, made in ignorance of our researches. A notice of his results appeared in the Annals, ser. 2. xviii. p. 217, 1856. In a still more recent essay by Hofmeister (Jahrb. d. wiss. Botanik, Heft i. Berlin, 1856), the existence of a cellulose membrane on the germinal vesicle before fecundation, is said to be usual, but liable to exception.—A. H.]

[To be continued.]

XXXVI.—*On the Presence of Motile Organs, and the Power of Locomotion, in Foraminifera.* By P. H. Gosse, F.R.S.

In a valuable paper by Mr. Macdonald "On Deep Soundings in the Pacific," which was published in the 'Annals of Nat. Hist.' for October last, there occurs the following passage:—"With all our opportunities of observing living Foraminifera in the South-western Pacific, where they abound in the most diversified forms, we have never been able to discover their branched 'pseudopodia,' so called, or the slightest evidence of the crawling movement which they are reputed to exhibit; while we can vouch for the actual fixity of some."

I have read this passage over and over, and cannot come to any other conclusion than that, as the language is unlimited, it is intended that the doubts should apply to the whole class of Foraminifera. As the opinions of so excellent a zoologist will have deserved weight, though founded on evidence which is merely negative, it may not be amiss to furnish some positive testimony on the opposite side—testimony which I should otherwise have thought perfectly superfluous. For, on turning to the works of one of our most eminent physiologists, Dr. Carpenter, who has devoted much careful attention to these minute animals, I find him (in his treatise "On the Microscope," for instance, p. 503 *et seq.*) recognizing, without any doubt, the existence of pseudopodia; and he reproduces two beautiful figures, after Schultze, of the genera *Gromia* and *Rosalina*, taken from the life, in which these organs are seen extended in copious profusion. He does not, indeed, allude to their power of changing place; but to this fact, as well as to the existence of pseudopodia, I can add my own testimony.

In the spring of 1855, at Weymouth, I obtained, chiefly in the minute tufted Algæ, such as *Corallina*, *Polysiphonia*, and *Ceramium*, a good many specimens of the pretty little *Polystomella crispa*. These were always found, a few hours after the weed had been deposited in my vases, adhering to the glass, with the pseudopodia extended in opposite directions, just as

represented in my outline figure of the species*, which was taken from the living animal. Very frequently these tiny atoms were found, in the morning, two, three, or even four inches up the sides of the perpendicular glass vases, having crawled this distance in the course of the night. And they never remained long stationary; the next morning would find them in some remote part of the glass. The night was manifestly their time of activity.

After my return to London, all through the spring and early summer, one of my tanks was literally swarming with a species of *Polymorphina*; the individuals increasing immensely and rapidly by generation, or perhaps by gemmation (for, being very much pressed with other work, I had not time to investigate the interesting problem of their mode of increase); although, when I stocked the tank, I was not cognizant of the presence of any; the fruitful parents of this abundant progeny having doubtless been introduced in some tuft or tufts of weed.

The individuals were of various dimensions; a large number having quickly attained the adult size, viz. about $\frac{1}{16}$th of an inch in length. They studded the sides of the vessel, the stones, and the slender weeds, adhering to the filaments of the latter in such profusion as to cover the whole contents of the vessel with white dots, conspicuous even upon the most cursory glance. These, like the *Polystomellæ*, were constantly roaming; they crawled up and down the stems and branches of the Algæ, and over the various objects in the tank, never remaining long in one station.

On removing one from the vessel (which I did frequently) to an aquatic cell or 'live-box,' for microscopic examination, it was found to be entirely withdrawn; but, in the course of a few minutes, the pseudopodia were seen to be protruding their tips; and then they gradually (so gradually that the eye could not recognize the process of extension) stretched and expanded their lines and films of delicate sarcode, till, in the course of a few hours, these would sometimes reach almost from side to side of the glass cell. The extension was principally in two opposite directions, corresponding to the long axis of the shell; though the branched and variously connected films often diverged considerably to either side of this line, giving to the whole a more or less fan-like figure.

Though the array was so very deliberately put forth, it was very rapidly withdrawn on any disturbance to the animal; as when the water was agitated by slightly moving or turning the cover of the cell.

I am quite certain, from manifest (though small) changes of

* Marine Zoology, vol. i. p. 13. fig. 14.

position in the shells, while under observation on the stage of the microscope, that it is by means of the adhesion and contraction of the pseudopodia, that the animal drags itself along a fixed body.

I hope I have not misunderstood the observation of my respected fellow-labourer, by supposing it more absolute than he intended it; but, at all events, the facts above recorded may possess an intrinsic interest sufficient to warrant their publication.

XXXVII.—*Note on the Presence of the Fossil genus* Isodonta, *Buv., in the English Jurassic Rocks.* By John Lycett, Esq.

To James Buckman, Esq., Hon. Sec. to the Cotteswold Naturalists' Club.

Dear Sir,

Will you have the goodness to communicate to the Club, at their next meeting, that we may claim the genus *Isodonta*, Buv. (*Sowerbya*, D'Orb.), as an addition to the fauna of the English Jura?

The sole species hitherto described is the *Isodonta Deshaysea*, Buv., from the ferruginous Oolite of the Oxfordian beds of the Department of the Meuse. Recently, my good friend Mr. Leckenby presented me with a fine specimen of the so-called *Cucullæa triangularis*, Phill., from the Cornbrash of Scarborough. The resemblance in the general aspect of this shell to the *Isodonta* of Buvignier was at once apparent; but it was only upon an inspection of specimens in the British Museum, collected by M. Tesson, that their identity with the Yorkshire shell became a conviction to my mind. Individual specimens vary in their elongation and in the degree of angularity at their infero-posterior extremity: little differences of this kind form the sole distinction between the British fossil and that of the Meuse, and the Normandic specimens in the Museum differ from each other at least to an equal extent. The *Cucullæa triangularis*, Phill. Geol. York. i. tab. 3. fig. 31, is from the Coralline Oolite of Malton; it is somewhat less elongated than my Cornbrash specimen, and agrees more nearly with the figures of Buvignier, 'Paléont. de la Meuse,' Atlas, pl. 10. figs. 30–35, except that the figure of Phillips is somewhat more inequilateral from the shortness of the posterior slope: in the Cornbrash specimen, as in those from Normandy and from the Meuse, this feature is less conspicuous; but there can be no doubt that the anterior side is always somewhat more produced than the other; the surface is smooth, but with two distant and strongly-marked